

Serial No. 09/284,024

Attorney Docket No. 051009/0119

**REMARKS**

Entry of the foregoing amendment prior to examination is respectfully requested. Claims 1-14 are pending in the application. Claim 1 has been amended to change "food" to "sausage" casing to further define over the prior art. Claim 1 has also been amended to indicate that the shrinkage is measured before stuffing to address the section 112, second paragraph rejections. With respect to the term "thermoset," applicants submit that this term is sufficiently definite. See MPEP 2173.02 (only a reasonable degree of particularity and distinctness is required by Section 112, second paragraph). While the examiner may be correct that the term "thermoset" may also mean "crosslinked," in the context of the present application, one skilled in the art understands the meaning "thermoset," particularly since this term is used throughout the specification. If the Examiner believes that there is more preferable alternative language that does not affect the scope of the claims, the Examiner is invited to suggest such language. New product-by-process claims 15 and 16 have been added. Support can be found throughout the original disclosure, for example, at page 8, line 30 to page 10, line 12. No new matter has been entered.

With respect to the outstanding prior art rejections, applicant submits that the claims are allowable for the reasons of record. Applicant provides the further comments in support of patentability.

Schumacher does not disclose sausage casings, but rather shrink films which are, inter alia, useful for packaging finished sausages (see Example 6) and other foodstuff. The film is generally a flat film. In Example 6 of Schumacher, an ethylene/vinyl acetate (EVA) film is

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produced by blow molding. The film is subsequently laid flat, subjected to a corona treatment and then divided in the usual manner into two individual sheets. The thus produced flat film is then laminated against a polyamide film, using a polyurethane adhesive. Next, the laminate film is heated on a vacuum forming machine (col. 13, lines 8 – 12). This thermoforming process is described as being adequate for the required stretching (see col. 6, bottom paragraph). Into the cavity of the thermoformed film 5, sausages are described as being placed parallel to each other. A covering film is then placed onto the thermoformed first film and fixed by heat sealing. In a hot air hollow chamber the package is finally heated to approximately 140 °C. This causes the film to shrink and to wrap tightly around the sausages. By this process a secondary packaging is produced, which is not in any way comparable with a sausage skin, as claimed.

Films as taught by Schumacher need to have a very high shrink of much more than 20% at 80 °C. Accordingly, they are not thermoset (which would reduce the thermoshrink). Even if these film had, arguably, a tubular form, the shrink would be too high for a sausage skin. Thus, Schumacher fails to teach or suggest a sausage casing having the specific properties as claimed.

Chacko does not cure the deficiencies of Schumacher. Chacko discloses polyamide compositions useful for molding and film applications (see abstract). The polyamide compositions include a polyamide resin and a block copolymer such as Pebax 5533 (see col. 6, lines 25-27), which is also employed in the present application. Chacko fails to disclose or suggest this block copolymer as being useful for sausage casings, as claimed. Even if a person skilled in the art had combined Schumacher with Chacko, they would not have arrived at the

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present invention, because the combination does not teach or suggest a sausage casing having the claimed properties.

One skilled in the art would not have been motivated to combine Vicik with the other references for the reasons noted in the response dated November 13, 2001. That is, Schumacher discloses that high shrinkage is important, whereas Vicik teaches low shrinkage. Other than applicant's own disclosure, where does the motivation to have combined these references come from? Accordingly, applicants submit that the combination of references fails to teach or suggest the claimed invention.

New claims 15 and 16 have been added in a product-by-process format.

Applicants submit that this claim is further allowable over the prior art. The presently claimed oriented tubular film is produced in a so-called double-bubble process (also designated as an oriented film process). That means, first a primary tubing (first bubble) with a relatively high wall-thickness is produced in an extrusion process using a ring-die. As claimed, the primary tube is rapidly cooled down. After reheating, the tube is then inflated again and by internal pressure and biaxially stretched in a second bubble. This allows a higher area stretch ratio than ordinary film blowing (which has only a single bubble). Also, the degree of orientation of the polymer chains is much higher than in a blown film. Vicik only discloses that "plastic casings are typically made by either blown film and oriented film processes" (col. 2, lines 16/17) and shows the oriented film process in Fig. 1. This results in a significantly different film than the films produced by the claimed process for the reasons noted above. Thus, applicants submit that claims 15 and 16 are further allowable over the prior art.

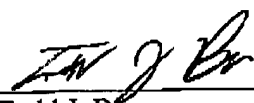
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Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

March 14, 2002  
Date

  
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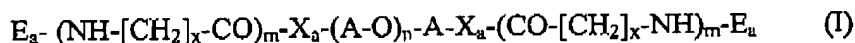
Should additional fees be necessary in connection with the filing of this paper, or if a petition for extension of time is required for timely acceptance of same, the Commissioner is hereby authorized to charge deposit account No. 19-0741 for any such fees; and applicant hereby petitions for any needed extension of time.

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

1. (Thrice Amended) A biaxially stretched and thermoset, tubular, seamless, single-layer or a biaxially stretched and thermoset, tubular, seamless, multiple-layer sausage [food] casing having a residual shrinkage in the range of from 5 to 20% at 80°C, wherein the shrinkage is measured before stuffing, in which the layer or, in the case of multiple-layer casings, at least one of the layers comprises a block copolymer containing "hard" aliphatic polyamide blocks having a glass-transition temperature of from 20 to 80°C and "soft" aliphatic polyether blocks having a glass-transition temperature of from -100 to -20°C, which block copolymer corresponds to one of the formulae I to III



where

A is an alkanediyl radical of the formula

-CH<sub>2</sub>-CH<sub>2</sub>- (= ethane-1,2-diyl),

-CH<sub>2</sub>-CH(CH<sub>3</sub>)- (= propane-1,2-diyl) or

-(CH<sub>2</sub>)<sub>4</sub>- (= butane-1,4-diyl),

X<sub>a</sub> is -O- or -NH-,

E<sub>a</sub> is H, (C<sub>2</sub>-C<sub>8</sub>)alkanoyl, benzoyl or phenylacetyl,

CO-N([CH<sub>2</sub>]<sub>x-1</sub>-CH<sub>3</sub>)-CO-(C<sub>1</sub>-C<sub>4</sub>)alkyl,

CO-N([CH<sub>2</sub>]<sub>x-1</sub>-CH<sub>3</sub>)-CO-C<sub>6</sub>H<sub>5</sub> or

CO-N([CH<sub>2</sub>]<sub>x-1</sub>-CH<sub>3</sub>)-CO-CH<sub>2</sub>-C<sub>6</sub>H<sub>5</sub>,

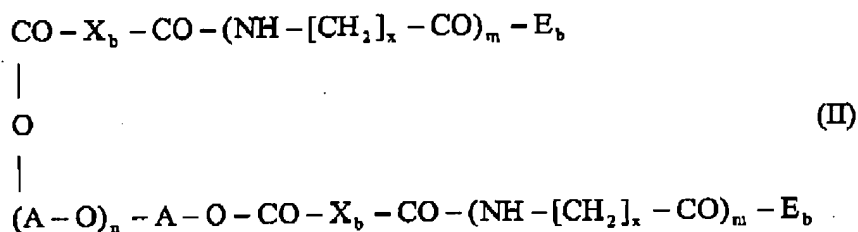
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$x$  is an integer from 5 to 11,

$m$  is an integer from 30 to 200 and

$n$  is an integer from 4 to 60;



where

$\text{X}_b$  is an alkanediyl radical of the formula  $-\text{[CH}_2\text{]}_z-$ ,

where  $z$  is an integer from 4 to 10,

*meta*- or *para*-phenylene,

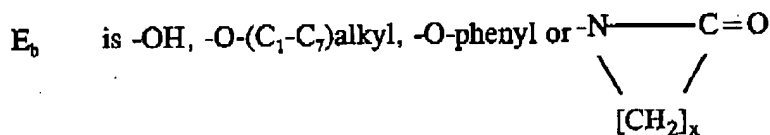
$-\text{NH}-(\text{C}_1-\text{C}_6)\text{alkyl}-\text{NH}-$ ,

$-\text{NH}-\text{C}_6\text{H}_3-(\text{CH}_3)-\text{NH}-$ ,

$>\text{N}-[\text{CH}_2]_{x-1}-\text{CH}_3$ ,  $-\text{[CH}_2\text{]}_z-\text{CO}-\text{N}([\text{CH}_2]_{x-1}-\text{CH}_3)-$  or

$-\text{C}_6\text{H}_4-\text{CO}-\text{N}([\text{CH}_2]_{x-1}-\text{CH}_3)-$ ,

where  $\text{C}_6\text{H}_4$  is *meta*- or *para*-phenylene,

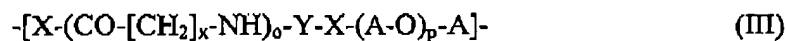


and

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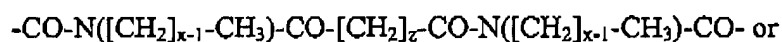
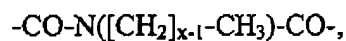
A, m and n have the meanings given above;



where

Y is  $-CO-$ ,  $-CO-[CH_2]_z-CO-$  or  $-CO-C_6H_4-CO-$ ,

where  $C_6H_4$  is *meta*- or *para*-phenylene, or is



where  $C_6H_4$  has the meanings specified,

o is an integer from 10 to 150 and

p is an integer from 4 to 100 and

A, x and z have the meanings given above.